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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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Potato late blight, page 444, is reported from the Carolinas by Alton E. Prince, from Southern Alabama by G. M. Stone, and from Louisiana by Douglas C. Bain. In spite of late blight, unusually heavy yields were obtained in the Charleston area of South Carolina and in Southern Alabama, so that the 30 to 40% loss estimated for the late crops in those regions constitutes a heavy loss in bushels. The early crop was thought not to be appreciably damaged but experimental evidence obtained in Alabama indicates otherwise, according to Stone.

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A. L. Harrison, page 448, reports that pole beans in a Florida West Coast area suffered the heaviest attack of rust ever observed in the region. Occurrence of diseases on cucumbers in the Carolinas, and on lettuce in New Jersey, and of southern root rot on Georgia-grown tomato plants shipped to Indiana, is reported in notes by Alton E. Prince, A. J. Mix, and J. S. Tidd, respectively.

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POTATO LATE BLIGHT IN SOUTHERN STATES

Reports are of Emergency Plant Disease Prevention Project surveys.

LATE BLIGHT AND OTHER DISEASES IN NORTH CAROLINA: During a brief survey, May 16 to 17, made with D. E. Ellis of the North Carolina Experiment Station, late blight (Phytophthora infestans) was seen in the Beaufort area, in one field of Cobbler from Prince Edward Island seed. The disease was just starting and probably would cause little damage because the potatoes were to be dug within a day or two. No late blight was found in several other fields inspected in the area.

Other diseases seen were purple top and leaf roll [virus] and southern blight [Sclerotium rolfsii], but it was not possible to make definite estimates as to loss because of the very heavy damage that was being caused by aphids.--Alton E. Prince

LATE BLIGHT AND SCAB IN SOUTH CAROLINA: A brief survey of truck crop diseases in the Charleston County area was made May 18 to 20 with Dr. C. N. Clayton of the Truck Experiment Station at Charleston.

Late blight on potatoes was very serious, the leaves in most fields seen being nearly dead or all dead. Growers with late potatoes will lose heavily. According to Dr. Clayton, at a meeting with about half of the potato growers of the county, the probable loss from late blight was estimated as averaging about 30% of their crop. When considering the above-normal yields that are being obtained this represents considerable loss.

Scab (Actinomyces scabies) was serious in one field.--Alton E. Prince.

LATE BLIGHT IN SOUTHERN ALABAMA: By April 28 (PDR, May 1, p. 378), late blight had become general over the entire potato-growing section of Southern Alabama. Plants in most fields in the southern half of Baldwin County were completely killed. The writer was accompanied by J. L. Seal on a final inspection of the area, May 9 to 11. It was learned that late blight had developed rapidly to the north, and plants in practically all fields were either dead or severely damaged. Harvest was about complete in the southern half of the section and well under way to the north.

As stated in the previous report, about half of the potato crop was planted in advance of or near the usual planting time. The remainder was planted 2 to 4 weeks later; thus the distinction between the early and late crops referred to below.

Growers and packing house operators in various parts of the area were interviewed in an effort to gain further information on the effect of late blight on the crop this year. A summary of the statements obtained is as follows: (1) The season was one of the best on record for potato production. (2) Late blight did little damage to the early crop. (3) The late crop was cut 30 to 40% because of the disease. (4) Control measures should be used in the future; a satisfactory dust would be preferred.

In spite of late blight, the per acre yield for this year is equal to, or slightly above, the long-time average for the county. This makes it difficult to estimate accurately the loss caused by disease. The only specific information available is that furnished by some unpublished data of the Alabama Agricultural Experiment Station, based on results of a

spray experiment conducted this year at the Gulf Coast Experiment Station at Fairhope, where the yields of potatoes on sprayed plots were as much as 20% higher than on unsprayed plots. This experiment was conducted on Triumph potatoes planted in early February (considered as early potatoes) and dug at 85 days. In general, the opinion of growers, of the writer, and of other agricultural workers was that the early crop was not materially damaged by late blight. Yet, the above experimental evidence shows otherwise. This shows clearly the danger of attempting to evaluate the effect of a disease on a crop without sufficent experimentation to guide one, even though intensive surveys are made.--G. M. Stone

LATE BLIGHT IN LOUISIANA: Late blight by now has spread over a large part of the potato sections of the State. Damage has been caused to late-planted potatoes. However, the disease showed up too late to cause as much damage as it did last year.--Douglas C. Bain. May 1-12

DISEASES OF WINTER VEGETABLES IN THE SALT RIVER AND YUMA VALLEYS OF ARIZONA

Wm. G. Hoyman

Several weeks were spent in the Salt River and Yuma Valleys from November 21, 1944 until April 26, 1945, observing diseases of winter vegetables. As usual, a greater part of the acreage was devoted to head lettuce. In the Salt River Valley, 134 lettuce plantings comprising 5,323 acres were visited within the above period. Drop, caused by Sclerotinia sclerotiorum, and big vein (virus) were the only common diseases. S. sclerotiorum occurred in 74 fields (3,989 acres) but caused less than 1% loss in 62 plantings. The losses ranged from 1 to 9% in the other 12. Big vein occurred in 30 fields; the amount of infection varying from 1 to 68% in 20 plantings and less than 1% in the other 10. Since big-vein heads are generally marketed, it is somewhat difficult to estimate the loss from this virus. In a previous report (PDR 28: 120-121. 1944), for the winter of 1943-44, it was indicated that big vein occurred in approximately 25% of the lettuce plantings with infections ranging from very slight to 12.3%. During the present season fields were observed where 25, 28, 38, 47, 48, 66, and 68% of the plants were infected. No diseases were observed in 38 plantings (1,724 acres). Both drop and big vein occurred in 10 fields. Erwinia carotovora, soft rot, was of minor importance in 2 plantings in the Salt River Valley but caused severe loss in 40 acres at Picacho, Pinal County, during the latter part of April.

Other vegetables observed in the Salt River Valley were broccoli, cauliflower, cabbage, carrots, spinach, endive, mustard, and beets. No parasitic diseases were found in 14 plantings (870 acres) of broccoli; in one 90-acre field less than 1% of the plants at scattered locations had a partial lack of chlorophyll (probably genetic). With one exception, 18 fields of cauliflower (864 acres) were free from any diseases. An undetermined wilt caused 25% loss in a 40-acre planting. Sclerotinia sclerotiorum, watery soft rot, occurred in 6 out of 21 fields (587 acres) of cabbage. The losses varied from less than 1 to 18%. No diseases were observed in 14 carrot plantings (403 acres). S. sclerotiorum, drop,

caused less than 1% loss on 70 acres of endive. Cladosporium macrocarpum, black mold, caused slight damage in one small planting of spinach. No diseases were observed on small acreages of mustard or beets.

Celery is a relatively new crop for the Salt River Valley. Four plantings (67 acres) were observed and found to be quite free from diseases. Sclerotinia sclerotiorum, foot rot, Septoria apii, late blight, and Cercospora apii, early blight, were present in one 30-acre planting but no one pathogen was causing over very slight loss. Less than 1% foot rot was present in 3 acres and very slight late blight occurred in a 16-acre planting. One experienced grower (Japanese) had sprayed with bordeaux mixture and his planting (18 acres) was the only one free from any diseases.

In the Yuma Valley big vein was the most common disease observed in the 49 lettuce plantings (3,758 acres) visited. It occurred in 22 fields (1,823 acres). In only one instance was the infection less than 1%; in all other cases it ranged from 1 to 76%. Sclerotinia sclerotiorum was only observed in 5 fields; in 4 instances the losses were less than 1% and in the fifth 1% of the plants were infected. No diseases were observed in 23 fields (1,435 acres). In one 8-acre planting both drop and big vein were present. Other winter vegetables observed at Yuma were cabbage (160 acres), carrots (245 acres), and peas (10 acres); no diseases were observed on these crops.

Observations in the Salt River Valley for the 3 preceding winters previous to the inception of the Emergency Plant Disease Prevention Project indicated that Sclerotinia sclerotiorum had caused severe losses to some lettuce growers. During the past 2 seasons, however, the losses have been small. There has been a tendency for growers to plant on land less frequently cropped to lettuce; this may account for the reduction of this disease. Drop has been of little concern in the Yuma Valley during the past 2 winters but big vein appears to be on the increase here as well as in the Salt River Valley.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

FREEZING INJURY TO PEAS AND PEA DISEASES

Reports are of Emergency Plant Disease Prevention Project surveys.

FREEZING INJURY TO PEAS AND PEA ROOT ROT IN THE UPPER EASTERN SHORE SECTION OF MARYLAND: Following the survey of freezing injury to field-grown peas in Delaware, reported by J. W. Heuberger (PDR May 1, p. 384), examination was made of pea fields in the adjacent part of Maryland where the freeze of April 5 and 6 had been severe. Thirty-two fields, totaling an estimated 530 acres, were visited on May 2 to 3. These fields were in the vicinities of Goldsboro, Greensboro, Ridgely, Denton, Federalsburg, Hurlock, Reliance, and Eldorado. Peas had been planted in the area at varying dates from mid-March to about the first of April, but most of the larger plantings had been made early in this period so that the peas were from 3 to 4 inches tall when the freeze occurred. The variety was Alaska.

The injury agreed with that described by Dr. Heuberger, involving especially checking of the growing point and its replacement by means of axillary shoots. In case of severe injury from 1 to 3 such shoots per

plant had developed from nodes an inch or two above the ground. In a few later plantings, where the plants had only just emerged when the freeze occurred, these "replacement-shoots" arose mostly from nodes beneath the soil surface.

Three small fileds, totaling 6 acres, were found that had been planted late enough to escape injury entirely. Of the remaining 30 fields, 5 fields totaling 75 acres showed injury recorded as "slight", 17 fields with 235 acres as "moderate", and 7 fields with 215 acres as "severe". These terms have only relative value since, as pointed out by Dr. Heuberger, it is not possible to forecast the effect of the injury on yield. In the most severely injured fields the new shoots were several inches tall and the plants were just coming into bloom, bearing from 1 to 4 blossoms per plant. As of the date examined a fair yield seemed possible.

Incidental to this survey observations were made as to the occurrence of pea root rot (Aphanomyces euteiches, diagnosis by Dr. L. S. Olive). In 9 fields, totaling 180 acres, the disease was not found. In 13 fields (215 acres) it was just beginning to appear, with, at the most, 5% of the plants showing definite symptoms, and in 5 fields (75 acres), the disease was further advanced and from 10 to 15% of the plants were affected. Finally in 5 fields (60 acres) the damage was severe. From 30 to 40% of the plants were diseased and a number of rather large patches occurred in which the plants were brown and completely dead.

In addition to submitting specimens to Dr. Olive, the writer attempted a number of isolations, which yielded a species of Fusarium and one of Rhizoctonia. Some of the specimens collected showed symptoms resembling those described by O. A. Reinking (New York (Geneva) Tech. Bull. 264) for Fusarium and for Rhizoctonia root rot. It is believed that most of the root rot observed was caused by Aphanomyces euteiches, but that other organisms were commonly present as secondary invaders, and that perhaps in a few cases root rot had been initiated by species of Fusarium or of Rhizoctonia.--A. J. Mix

FREEZING INJURY AND DISEASES IN INDIANA: During the week ending May 19, the writer was accompanied by Dr. A. P. Lorz of the Department of Horticulture, Purdue University.

Not a major crop in Indiana, peas for canning and freezing are grown to a limited extent, however, as a first crop in a number of localized areas in the State. A total of 41 fields comprising at least 200 acres were visited. In at least half the fields the plants were only a few inches high; in others, they were taller but not yet blooming. One field was in blossom.

In Marion, Morgan, Johnson, and Shelby Counties, Alaska (Fusarium wilt-resistant) was the principal smooth-seeded variety planted. Ace, a wrinkled, sweet variety was also encountered but in one section only. Just east of Indianapolis and also north of that city, in Hancock, Hamilton, Madison, Tipton, Howard, and Grant Counties, Alaska was again the principal canning pea. In this area also, Shasta, Thomas Laxton, and Perfection (a canning variety) were being grown for freezing, the latter variety on an experimental basis.

Freezing injury was the most important trouble. Such injury was confined for the most part to the earliest planted peas in Marion and Morgan

Counties. One field of 17 acres at Martinsville, which was flowering at the time of severe frost, had since put up stools or secondary stems that were beginning to bloom. It was too early to determine whether any reduction in this crop would result.

Common root rot (Aphanomyces euteiches) and Rhizoctonia root rot (R. solani) occurred as a trace in 10 of the 41 fields. Bacterial blight (Pseudomonas pisi) occurred as a trace in 3 fields, on lower leaves and stems. Lesions resembling those of anthracnose (Colletotrichum pisi) were found on lower leaflets on an occasional plant (trace) in several fields. Unfortunately, the few specimens secured did not lend themselves to positive identification.

In general, however, the pea acreage surveyed was in excellent condition. Intermittent light showers as well as heavy rains occurred during the week with the result that low areas in several fields were flooded. With more rain possible, the disease situation may likely be changed in the not too distant future especially as the plants reach maturity.--J. S. Tidd.

OTHER REPORTS ON VEGETABLE DISEASES

Except where noted, reports are of Emergency Plant Disease Prevention Project surveys.

BEAN RUST ON THE WEST COAST AREA OF FLORIDA: Early in March the writer's attention was called to a large field of pole beans near Sun City, Florida, which was severely affected with bean rust (Uromyces phaseoli var. typica). There were 2 varieties, Kentucky Wonder and U.S. No. 4, with several ages of plants in the field, but bean rust was uniformly severe over the entire planting of about 400 acres. When the field was first inspected, from 50 to 75% of the leaves had already shed on the older plants and the remaining leaves were severely spotted. The early planted beans produced a fair crop but the later plantings were abandoned because of the rust. No accurate estimate can be made of the losses sustained by this grower, but it can safely be said that it ran into the hundreds of dollars. Dusting with sulfur did not appear to check the spread of the disease.

Many other bean fields in the area have also been seen from time to time during the spring season, in which bean rust has been unusually severe. All growers report that this past season was the worst outbreak of bean rust that they ever experienced. The growing of pole beans on a large scale in this area is comparatively new. There were several hundred acres this past season, but unless some fungicide is found that will give good protection or a variety is introduced that is resistant to the race or races of the fungus present, the growing of pole beans in this area may soon be a thing of the past.--A. L. Harrison, University of Florida Vegetable Crops Laboratory, Bradenton

ANGULAR LEAF SPOT AND DOWNY MILDEW ON CUCUMBERS IN THE CAROLINAS: During a brief survey, with Dr. D. E. Ellis of the North Carolina Agricultural Experiment Station, May 16 to 17, the most serious disease conditions in the Wilmington area were found in cucumbers. In a 1-acre field

100% of the plants were infected with Phytomonas [Pseudomonas] lachrymans causing the angular leaf spot disease. In a second, half-acre, field 77% infection was present, and the disease was just starting in an adjacent 1-acre field.

In the Charleston County area of South Carolina a brief survey was made with Dr. C. N. Clayton of the Truck Experiment Station at Charleston, May 13 to 20.

Angular leaf spot of cucumbers was present in the 5 fields inspected, damage ranging from a trace to light or medium. Infection in one field was 100%. Downy mildew (Pseudoperonospora cubensis) was present in trace amounts in all fields seen in the lower part of the county. It was not seen outside of the county between Charleston and Blackville.--Alton E. Prince.

LETTUCE DISEASES IN NORTHERN NEW JERSEY: Report of ninth visit to northern New Jersey vegetable growers, May 9-11. Gray mold (Botrytis sp.) was found present on all lettuce-growing farms but one (Farm 7). It was observed for the first time at Farms 12, 16, 17, and 10, where it had not been present in seedling frames. Losses had increased somewhat, being in general from 2 to 5% in Iceberg lettuce, 4 to 6% in Boston, and 5 to 10% in Romaine. Considerable loss had occurred in Romaine at the farms where the disease had been first observed (i.e. where it was present for the longest time); total losses to date amounting to 15% at Farm 4, 25% at Farm 11, and 20% at Farm 18.

Drop (Sclerotinia sclerotiorum) which had previously been seen only in frame-grown Boston, was found present in fields of Iceberg (loss about 2%) at Farms 3, 9, and 20; of Boston (loss 4 to 6%) at Farms 3, 9, 10, and 20; and of Romaine (loss about 2%) at Farm 3. Frame-grown Boston lettuce at Farm 15 where drop was observed on the preceding visit was now nearly all harvested; loss of about 20% was estimated by the grower.

Mosaic (virus) of lettuce was present in all varieties and in all fields. The amounts were quite uniform in the different fields, from 2 to 4% of all plants being affected in the Iceberg variety, and from 4 to 8% in Boston and Romaine.--A. J. Mix

CONDITION OF GEORGIA-GROWN TOMATO PLANTS RECEIVED IN INDIANA: Certified Georgia-grown plants for transplanting were examined at 2 Indiana canneries on May 17 and 18, and in general, were in fair to good condition. Spindling plants were common in some lots.

In Johnson County, one large shipment of non-certified Georgia-grown plants (Rutgers variety), which had been packed in crates and had come by truck, were badly infected with Sclerotium rolfsii, the cause of southern root rot. From 25 to 50% of these were being discarded before the remainder were sent out to the growers. Moldy plants brought into the laboratory have developed sclerotia in abundance. Undoubtedly there will be considerable loss in the Indiana fields where the remaining plants were set as the entire shipment no doubt came from a Georgia seedbed where the disease had been present in the past.--J. S. Tidd

VEGETABLE AND FRUIT STORAGE DISEASES IN NEW YORK
SUMMARY OF THE 1944-1945 STORAGE SEASON

Robert C. Cassell

Potatoes

The following summary is the result of surveys made during the period beginning March 5 and extending through April 15, 1945. During the course of the survey 127 bins of potatoes were examined at 82 locations (farm or community storages) in the following 10 counties: Allegany, Broome, Cortland, Erie, Genesee, Onondaga, Orleans, Oswego, Steuben, and Wyoming. This area embraces the central and west-central parts of the State, where roughly 60% of the potato acreage occurs. The survey did not include Long Island which has about 35% of the State's potato acreage, nor did it include the small potato area of Franklin and Clinton Counties in the northeastern part of the State.

Although New York is the second largest potato-producing State, with a yearly average production of 29,065,000 bushels from 1930 to 1939, it is difficult to obtain accurate data on disease problems. Potatoes are grown for sale by 100,000 growers of whom 93% grow less than 5 acres. These small growers have 47% of the total acreage. This emphasizes the fact that although certain potato areas are well defined the acreage is nevertheless widely scattered.

In Table 1 are listed by potato varieties the pathogens and other decay agencies found in storage. This includes approximately 571,680 bushels of potatoes examined. Almost without exception the potatoes were held in common storage which was often the home cellar. Larger quantities, however, were found in especially constructed potato storages or remodeled buildings either at the farm or at a local shipping point.

Pathogens and Crop Losses. As a group the Fusarium rots accounted for the greatest single financial loss in storage to growers in the area surveyed. Grouping the rots caused by Fusarium [solani f.] eumartii, F. sambucinum f. 6, and other Fusarium spp., there was an average loss of almost 4% in 93 of 127 bins where the Fusaria were found to be present (Tables 1 and 2). Considering all bins the loss averaged 3.43% of the 571,680 bushels examined. Of this amount a Fusarium rot of a somewhat different appearance from the dry rots usually found associated with Fusarium spp. was responsible for the greatest amount of loss. After learning what seemed to be the differences in appearance of this rot from the other Fusarium rots, isolations were made that consistently yielded a single species that has been identified by Dr. Otto A. Reinking as Fusarium sambucinum f. 6 (see also PDR 29: 337-342)

Further identification of the Fusarium rots at the bins was made solely upon macroscopic appearance which of course leaves the true identity of the majority of the F. sambucinum f. 6 type rot determinations open to question. Irrespective of whether the F. sambucinum f. 6 type rot determinations are at error, it is quite certain that the figures given for the grouping of the Fusarium spp. are approximately correct and probably those figures are the ones which should be properly accepted. However, as the figures stand here the F. sambucinum f. 6 type rot was present in 56% of the bins, causing a loss of almost 2.5% in the 571,680 bushels

Table 1. Agents responsible for loss of potatoes in storage in New York State 1944-1945

Variety and number of bushels represented	Pathogen or other agent	Prevalence of agent: All bins: Number examined	All bins: Average prevalence %	Affected bins: Number examined	Affected bins: Average prevalence %
Chippewa		13			
43,080 bu.	Actinomyces scabies		a(?)	3	2.4
	Corticium vagum [Pellicularia filamentosa]		a(?)	1	56.0
	Corynebacterium sepedonicum		b	2	trace+
	Fusarium rots (all)		6.4	13	6.4
	F. [solani f.] eumartii		b	1	trace
	F. sambucinum f. 6		4.8	12	5.2
	Phytophthora infestans		0.44	4	1.4
	Spondylocladium atrovirens		b	1	1.0
Green Mountain		6			
11,850 bu.	Actinomyces scabies		a(?)	1	5.0
	Corynebacterium sepedonicum		b	1	trace
	Erwinia atroseptica [E. phytophthora]		b	1	trace
	Fusarium rots (all)		0.46	3	0.92
	F. [solani f.] eumartii		b	1	trace
	F. sambucinum f. 6		0.4	3	0.63
	Phytophthora infestans		1.6	3	2.6
	Net necrosis (leaf roll virus)		0.84	1	5.0
	Stem-end browning		1.7	1	10.0
Houma		6			
22,250 bu.	Actinomyces scabies		a(?)	1	7.0
	Fusarium rots (all)		b	2	trace
	F. sambucinum f. 6		b	2	trace
	Phytophthora infestans		b	1	trace
Katahdin		41			
213,300 bu.	Actinomyces scabies		a(?)	6	28.3
	Corticium vagum [Pellicularia filamentosa]		a(?)	1	100.0
	Corynebacterium sepedonicum		0.12	7	0.71
	Fusarium rots (all)		1.1	24	1.9
	F. [solani f.] eumartii		b	3	trace
	F. sambucinum f. 6		0.6	22	1.1
	Phytophthora infestans		4.5	23	8.0
	Spondylocladium atrovirens		1.1	4	30.0
	Spindle tuber (virus)		b	1	3.0
	Hollow heart		b	1	4.0
	Freezing		0.54	2	11.1
Pontiac		1			
400 bu.	Fusarium rots (all)		8.0	1	8.0
	F. sambucinum f. 6		7.0	1	7.0

Table concluded on following page

Table 1 concluded

Variety and number of bushels represented	Pathogen or other agent	Prevalence of agent: All bins: Number examined	All bins: Average prevalence %	Affected bins: Number examined	Affected bins: Average prevalence %
Rural 147,600 bu.		30			
	Actinomyces scabies		a(?)	7	26.1
	Corynebacterium sepedonicum		b	1	0.75
	Fusarium rots (all)		1.1	25	1.3
	F. [solani f.] eumartii		b	6	0.37
	F. sambucinum f. 6		0.38	15	0.77
	Phytophthora infestans		0.35	13	0.81
	Net necrosis (leaf roll virus)		b	1	1.0
	Spindle tuber (virus)		b	1	5.0
	Stem-end browning		b	1	2.0
	Freezing		1.0	1	30.0
Sebago 128,050 bu.		26			
	Corticium vagum [Pellicularia filamentosa]		a(?)	3	0.75
	Corynebacterium sepedonicum		b	3	0.33
	Fusarium rots (all)		5.2	22	6.1
	F. [solani f.] eumartii		0.12	3	1.0
	F. sambucinum f. 6		3.21	14	5.94
	Phytophthora infestans		2.2	7	8.25
Sequoia 5,200 bu.		4			
	Actinomyces scabies		a(?)	1	trace
	Fusarium rots (all)		5.2	3	6.9
	F. [solani f.] eumartii		2.0	1	8.0
	F. sambucinum f. 6		3.5	3	4.1
	Phytophthora infestans		0.75	1	3.0
	Net necrosis (leaf roll virus)		0.75	1	3.0
	Stem-end browning		1.25	1	5.0

[a] Records kept only of seriously affected bins

[b] Less than a trace, for practical purposes prevalence infinitesimal.

Table 2. Most widely spread and destructive pathogens in 127 potato bins - New York State storages, 1944-1945

Pathogen	Bins affected: Number	Bins affected: Percent	Average prevalence: In all bins (percent)	Average prevalence: Within affected bins - (percent)
Fusarium rots (all)	93	73.2	3.43	3.93
(F. sambucinum f. 6)	(72)	(56.7)	(2.48)	(3.09)
Phytophthora infestans	52	40.9	1.23	3.01
Actinomyces scabies	19[a]	15.0[a]	2	8.6
Corynebacterium sepedonicum	14	11.0	trace	0.13

[a] Records kept only of seriously affected bins

Table 3. Prevalence of Fusarium rots (all) by potato varieties in 127 potato bins - New York State storages 1944-1945

Variety	Number of bins examined	Bins affected: Number	Bins affected: Percent	Average prevalence: In all bins (percent)	Average prevalence: Within affected bins - (percent)
Pontiac	1	1	100.0	8.0	8.0
Chippewa	13	13	100.0	6.4	6.4
Sequoia	4	3	75.0	5.2	6.9
Sebago	26	22	84.6	5.2	6.1
Katahdin	41	24	58.5	1.1	1.9
Rural	30	25	83.3	1.1	1.3
Green Mountain	6	3	50.0	0.5	0.9
Houma	6	2	33.3	trace	trace

Table 4. Prevalence of Phytophthora infestans by potato varieties in 127 bins - New York State storages, 1944-1945

Variety	Number of bins examined	Bins affected: Number	Bins affected: Percent	Average prevalence within affected bins (percent)
Sebago	26	7	26.9	8.3
Katahdin	41	23	56.7	8.0
Sequoia	4	1	25.0	3.0
Green Mountain	6	3	50.0	2.6
Chippewa	13	4	30.7	1.4
Rural	30	13	43.3	0.8
Houma	6	1	16.6	trace
Pontiac	1	0	0	0

(Table 2). "Z" disease (Fusarium [solani f.] eumartii) was found in 11.8% of the 127 bins, in locations in Onondaga, Wyoming, and Steuben Counties. Two percent was the most found in any one bin. Usually only a trace to less than 1% could be found in most affected bins.

In Table 3 the potato varieties are listed according to the amount of Fusarium rot occurring in the 127 bins (average prevalence all bins). Disregarding Pontiac, of which only one bin was examined, Chippewa, Sequoia, and Sebago would seem on this basis to be definitely more susceptible as a group to the Fusarium rots than Katahdin, Rural, Green Mountain or Houma. The average prevalence of the Fusarium rots in the Chippewa, Sequoia, and Sebago bins was 5.6%, while in the Katahdin, Rural, Green Mountain, and Houma bins it was only 0.74%.

The late blight organism, Phytophthora infestans, was the next most important pathogen producing loss in storage (Tables 1 and 2). It was found in almost 41% of the bins causing a loss of about 3% of the tubers in those bins. Late blight accounted for a loss of 1.23% of the total 571,680 bushels examined. In Table 4 it will be noted that although the percentage of affected bins of Sebago is not so great as with some of the other varieties, the average prevalence within affected bins is greater than for any other variety.

Records of the occurrence of scab (Actinomyces scabies) were kept only in those cases where the amount, prevalence, or severity was enough to cause financial loss or concern to the grower. The occurrence of scab in this amount was rare, except for one rather large area embracing 6 farms in Sheldon and Bennington Townships of Wyoming County. On these 6 farms, which had an average production of about 700 bushels, loss from scab averaged about 50%. Records of Rhizoctonia (Corticium vagum) [Pellicularia filamentosa] were kept as for scab. No serious occurrences were found, but the records as taken are given in Table 1.

Although a survey for bacterial ringrot (Corynebacterium sepedonicum) at this time of year is not very indicative of either the distribution or prevalence of the disease, records were nevertheless kept of its presence. It was found in 11% of the bins examined, with an average prevalence of 0.13% for the affected bins (Tables 1 and 2). It occurred in Steuben, Allegany, Wyoming, and Oswego Counties.

Silver scurf (Spondylocladium atrovirens) was seen in 3 bins of Katahdin and in one bin of Chippewa. It was found in widely scattered areas of Cortland, Genesee, Erie, and Steuben Counties. Severity was light to heavy in all cases and the average prevalence in the 4 bins was 30%.

Other diseases, encountered in scattered areas but with very little bearing on the total loss of potatoes, were blackleg (Erwinia atroseptica) [E. phytophthora], net necrosis (leaf roll virus), spindle tuber (virus), hollow heart (physiogenic), freezing injury both in the bin and in the field, and stem-end browning (cause unknown). A record of these diseases and injuries is given in Table 1.

Carrots

It was estimated that about 4,000 acres of carrots, yielding better than 2 million bushels, were grown in New York State in 1943. It is probable that about the same production was attained in 1944. In upstate New York carrots are produced commercially and stored principally in Wayne, Monroe, Orleans, and Ontario Counties. Fifteen cold storages and 5 common storages were under observation in these counties, housing 400,000 bushels. Between January 5 and April 15 these storages were visited 2 or 3 times in order to determine the losses in storage and to follow the progress of the diseases involved (see Tables 5 and 6).

Carrots as well as most other vegetables kept very well in both common and cold storage in upstate New York this year. Vegetables went into storage in excellent condition last fall. Harvesting was done under dry, cool field conditions, and in the absence of any severe early frost. The winter season during December, January, and most of February, was continuously cold, which helped the operators, especially of common storages, to maintain favorable temperatures in their houses. By March 1 most carrots had been removed from common storage. The season gave the common storage operators conditions as good as or better than the cold storage operators could maintain; as a result, contrary to the rule, carrots in common storage suffered less loss from rots than those in cold storage. Although the average temperature in the cold storages was 2.8° F lower than in the common storages, it appeared that carrots in the latter remained much drier and were less susceptible to rot development. The average loss was about 1% in common storage as of March 1, and 2.2% in cold storage as of April 15.

Table 5. Carrots: Storage conditions and rots in cold storage in New York State, 1944-1945

Location	Storage conditions: Amount stored	Storage conditions: Temperature	Storage conditions: Ventilation	Percent of carrot roots affected by pathogens: Botrytis spp.	Erwinia carotovora	Fusarium spp.	Penicillium spp.	Rhizoctonia spp.	Rhizopus & other Mucor spp.[b]	Sclerotinia sclerotiorum & other spp.	Stemphylium radicinum	Unknown fungi	Total loss
	bu.[a]	°F											%[e]
Clyde	15,000	31.5	Fair							2.0	0.5		2.5
Fairport	63,000	31.0	Poor	1.5						4.0		0.5[c]	6.0
Fairport	32,000	32.0	Good	1.0		tr		0.25	tr		0.25	tr[d]	1.6+
Lockport	150	32.0	Good	0.75							0.25		1.0
Marion	55,000	31.5	Good	0.5	tr					0.5	0.5	tr[d]	1.6+
Marion	24,700	31.5	Good	0.25				0.25		0.25	0.25		2.0
Medina	9,000	31.0	Fair	0.25	0.25	tr				0.5	0.25	tr[c]	1.25+
Newark	4,250	31.5	Good	0.75		tr				0.75	0.75		2.25+
North Rose	1,000	34.0	Fair	2.0						0.25	1.0	0.25[c]	3.5
Savannah	40,000	32.0	Fair	0.5		tr.				1.5	0.25	0.25[d]	2.5+
Sodus	1,500	31.5	Fair	0.75						0.75	0.75	tr+[c]	2.25+
Wallington	3,000	31.5	Good	0.2		0.2				0.2	0.2		1.0-
Webster	31,000	35.0	Fair	2.25		0.25				0.25		tr[d]	2.75+
Williamson	45,000	31.5	Good	0.75			tr	tr	tr	0.3	0.2	tr[c]	1.5
Williamson	15,000	31.5	Good	0.8	tr	tr+				0.3	0.2	0.2[c]	1.6+

[a] All carrots stored in crates or bushel baskets

[b] Five additional species have been isolated but identity and pathogenicity have not been established.

[c] Unknown fungus. A sclerotial forming fungus ulike Botrytis spp. or Sclerotinia spp.

[d] Unknown fungus. A black side or crown rot. On the crown it resembles somewhat the rot due to Stemphylium radicinum except that the edge of the affected area is brown, soft, and watery.

[e] Data in "Total" column equals sum of data under "Pathogens".

Table 6. Carrots: Storage conditions and rots in common storage in New York State, 1944-1945

Location	Amount stored	Storage conditions		Percent of carrot roots affected by pathogens							Total loss
		Temperature	Ventilation	Botrytis spp.	Erwinia carotovora	Fusarium spp.	Penicillium spp.	Rhizopus and other Mucor spp.	Sclerotinia sclerotiorum and other spp.	Stemphylium radicinum	
	bu.	°F									%[c]
Albion	32,000[a]	33	Fair	0.2	tr				0.7	0.1	1.0+
Fairport	7,500[a]	35	Good	0.3					0.1	0.1	0.5
Geneva	11,000[a]	34	Poor							0.8	0.8
Medina	6,000[b]	40	Poor	0.4	0.6	0.2	tr	tr	0.7		2.0-
Medina	7,000[b]	32	Good	0.1	0.1		tr		0.5	0.2	0.9+

[a] Stored in bulk

[b] Stored in bushel baskets

[c] Data in "Total" column equals sum of data under "Pathogens".

The 4 organisms found causing the greatest amount of loss in common storage were Sclerotinia sclerotiorum causing watery soft rot, Stemphylium radicinum causing black rot, Botrytis spp. causing gray mold rot, and Erwinia carotovora causing bacterial soft rot, in order of importance. In the cold storages 3 organisms were of primary importance, namely Botrytis spp, Sclerotinia sclerotiorum, and Stemphylium radicinum, in that order. It will noted in Table 5 that several organisms are listed as unknown or by genus only. Mr. W. E. Rader of the Plant Pathology Department at Cornell University, who made most of the isolations, is establishing their identity and will report them at a later date.

Onions

For the last 2 or 3 years the commercial onion acreage in New York State has ranged from 14 to 16 thousand acres. Production has ranged from 2,500,000 to 3,264,000 100-pound bags. The present survey was conducted in one of the important onion-producing areas of Orleans, Wayne, Genesee, Monroe, and Niagara Counties. Six cold storage houses and 2 common storages were under observation during the period of January 15 to April 15, 1945, including approximately 124,900 bushels in cold storage and 71,500 bushels in common storage. The estimated losses and the pathogens found associated with onions in storage are given in Table 7.

It was necessary to hold onions in storage longer than usual this season. The price was not sufficiently favorable to move them on to the market as they are usually handled. This created a hardship on a few storages such as those in Marion and Savannah, which were in poor condition from early storage season, since the lack of a good market prevented the disposal of the onions at an earlier date with considerably less loss. In the majority of storages, however, the onions were in exceptionally good condition through April 15, when the last visit was made to some of the houses.

The pathogens responsible for the greatest amount of loss in onion storages this season were Penicillium spp. causing blue mold rot, Fusarium spp. causing basal bulb rot, Botrytis (3 species) causing gray mold rot, and Erwinia carotovora causing bacterial soft rot, in approximately that order. Colletotrichum circinans, the smudge organism, and Aspergillus niger, black mold, although quite prevalent, did not appear to cause any bulb decay. Sour-skin (cause unknown) was found as a trace only in 2 of the storages, and Urocystis cepulae, smut, was not seen in any of the storages examined.

As pointed out under the discussion of carrot storages the winter storage season of 1944-1945 was exceptionally favorable for the common storage operators. As is shown in Table 7, onions in common storage kept as well as or better than those in cold storage this season, and were either disposed of earlier in spite of the unfavorable market or moved to cold storage in February or March.

Beets and Celery

Because of the fact that the storage survey in New York was not started until early January of 1945, very incomplete data were obtained on beets and celery, and no information worth reporting on cabbage or squash. Most of the celery, cabbage, and squash had been moved from storage by

Table 7. Onions: Storage and storage rots in New York State 1944-1945. Cold and common storage.

Type of storage and location	Amount stored	Storage conditions: Temperature	Storage conditions: Ventilation	Percent of onion bulbs affected by pathogens: Asper-gillus niger	Botrytis spp.	Colleto-trichum circinans	Erwinia caroto-vora	Fusarium spp.	Penicil-lium spp.	Others	Total loss
	bu.[a]	°F									%[d]
Cold Storages											
Albion											
Lot 1	9,352	31.5	Fair	0.1	0.1	0.5			0.2		0.9
Lot 2	10,360	31.5	Fair	tr	0.4	0.2	0.1	0.1	0.1	tr[b]	0.9+
Brockport											
Lot 1	2,342	33.0	Good	0.1		0.7					0.8
Lot 2	2,200	33.0	Good	0.5		0.3		tr			0.8+
Lot 3	4,124	33.0	Good	0.1	0.1	0.3	tr	0.2	0.5		1.2+
Holley											
Lot 1	3,045	32.5	Good	0.1	tr	0.2	tr	0.3	0.4		1.0+
Lot 2	21,880	32.5	Good	tr	0.1	0.5		0.2	0.1		0.9+
Lockport	1,633	32.0	Poor	0.2		0.7		0.1			1.0
Marion	30,000	34.0	Fair		5.0		4.0	5.0	10.0	1.0[c]	25.0
Savannah	40,000	34.0	Poor		10.0		10.0	15.0	5.0		40.0
Common Storages											
Albion	21,500	35.0	Fair		0.1	0.2	0.3		0.1	tr[b]	0.7+
Elba	50,000	35.0	Good		0.1	0.1	0.2	0.4			0.8

[a] Onions stored in crates
[b] Sour-skin
[c] A Mucor
[d] Data in "Totals" column equals sum of data under "Pathogens"

January 1, and as beets are mostly processed locally they too were largely out of storage early in January.

Beets. Several hundred tons of beets were seen at Raymond, mostly in common storage but some in protected piles stored out-of-doors. Smaller quantities were also found in common storage at Fairport, Savannah, and Binghamton. At the Raymond cannery very little loss of consequence was suffered except for that caused by boron deficiency (dry rot). Some lots had 40 to 50% dry rot, and all lots had at least a trace. The cannery officials reported that dry rot was more severe this year in the Raymond area than it had been for the last 4 or 5 years. Less than 1% rot occurred at Raymond from other causes. Fusarium spp., Rhizopus spp., and bacterial rots were present. At least 4 species of Fusarium were involved, the most prevalent being of the F. culmorum type.

Very little loss was experienced at the other storages. In Savannah the only disease present was scab (Actinomyces scabies), which occurred in light to moderate amounts on 1 to 2% of the beets. In Fairport and Binghamton only a trace of Fusarium spp. was present. No dry rot was found at Savannah, Fairport, or Binghamton.

Celery. New York annually produces about 1 1/3 million crates of celery. Approximately 1/2 of this amount is produced in Wayne County, and storages are mostly found in Wayne and Monroe Counties. Celery is stored in late September and early October and is usually disposed of by the last of December. The small quantities seen in January 1945 and reported here were those left of larger holdings, probably not sold because of their condition.

Table 8. Celery found in January storage in New York, 1944-1945 season.

Location	Quantity (crates)	Pathogens	Average prevalence %	Total loss %
Fairport	50 - Pascal	Erwinia carotovora[a]	30	
		Botrytis spp.	5	33
Fairport	30 - Pascal	Botrytis spp.	8	8
Savannah	16 - Pascal	Erwinia carotovora[a]	50	50
Savannah	150 - Pascal	Septoria apii[b]	100	40
Marion	20 - Blanched	Erwinia carotovora	tr	
		Botrytis spp.	tr	tr+
Newark	5 - Blanched	Ansatospora acerina	5	5

[a] Erwinia carotovora following field frost injury.
[b] Septoria apii, small-spot form

Apples

The following summary of apple diseases is based on a survey of 35 lots examined during the period from January 11 to January 26. The 35 lots were located in 7 cold storage plants, 3 in Monroe County, 3 in Orleans County, and 1 in Niagara County. Lots containig a total of 51,650 bushels of apples representing 10 varieties were examined (see Table 9). The

Table 9. Apples: Diseases in New York State cold storages, 1944-1945 season.

Variety[a] / Disease	Type of cooling system: Overhead coils: Number of lots Examined	Overhead coils: Number of lots Affected	Overhead coils: Number of bushels	Overhead coils: Fruits affected[b]: Severity[c]	Overhead coils: Fruits affected[b]: Av. % prevalence	Blower: Number of lots Examined	Blower: Number of lots Affected	Blower: Number of bushels	Blower: Fruits affected[b]: Severity[c]	Blower: Fruits affected[b]: Av. % prevalence
Baldwin	1		828			1		323		
Bitter pit		1		tr	tr		1		M-H	55
Scab[c]		1		L	3		1		M	40
Cortland	3		1,080			1		130		
Alternaria		0					1		tr	tr
Blue mold		2		tr-L	7		1		L	5
Gray mold		1		---	2		0			
Hail damage		0					1		M	45
Scab		3		M	42		1		L	35
McIntosh	13		22,925			6		2,643		
Alternaria		1		L	2		1		tr	tr
Bitter pit		0					1		H	5
Black rot		0					1		M	15
Brown rot		1		---	1		0			
Blue mold		11		L-M	8		4		L	11
Gray mold		9		---	1.4		1		---	10
Hail damage		0					3		M-H	4.7
Scab		13		tr-H	22.3		5		L-H	51.4
Northern Spy	1		23,000			1		16		
Bitter pit		1		L	4		1		L	5
Blue mold		1		L	6		1		L	5
Hail damage		0					1		L-M	40
Scab		1		M-H	70		1		L-M	25
Delicious	1		68			0				
Blue mold		1		L	4					
Scab		1		L	6					
Rhode Island Greening	2		1,495			1		300		
Hail damage		1		L	20		1		L	25
Scab		0					1		L	50
Scald (common)		2		L	12		0			
Rome Beauty	1		354			0				
Bitter pit		1		L	8					
Blue mold		1		L	5					
Twenty Ounce	1		200			0				
Scab		1		L-M	21					
Winter Banana	1		255			0				
Bitter pit		1		M	14					
Blue mold		1		L	4					
Scab		1		L	23					

Table concluded on following page

Table 9 concluded

Variety[a] Disease	Type of cooling system: Overhead coils: Number of lots examined	Overhead coils: Number of lots affected	Overhead coils: Number of bushels	Overhead coils: Fruits affected[b]: Severity[c]	Overhead coils: Fruits affected[b]: Av. % prevalence	Blower: Number of lots examined	Blower: Number of lots affected	Blower: Number of bushels	Blower: Fruits affected[b]: Severity[c]	Blower: Fruits affected[b]: Av. % prevalence
Wolf River	0					1		248		
Bitter pit							1		L-M	45
Blue mold							1		L	10
Hail damage							1		L	15
Scab							1		L	55

[a] Includes all grades as found in storage.
[b] Approximately 100 fruits were examined in each lot.
[c] Scab: Tr = trace, total scabbed area per fruit barely visible
L - light, total scabbed area per fruit from a trace to 1/4 inch in diameter
M = moderate, total scabbed area per fruit from 1/4 to 1/2 inch in diameter
H = heavy, total scabbed area per fruit 1/2 inch or more.
More or less arbitrary standards were used for the other diseases

Table 10. Severity and prevalence of diseases found in 35 lots of stored apples in New York State, 1944-1945 season

Disease	Number of lots affected	Severity range	Average prevalence in affected lots	Average prevalence all lots
			%	%
Alternaria	3	tr-L	0.8	trace
Bitter pit	8	tr-H	17.0	3.8
Black rot	1	M	15.0	slight
Blue mold	24	L-M	6.5	1.8
Brown rot	1	---	1.0	trace
Gray mold	11	---	4.5	slight
Hail damage	7	L-M	26.9	3.8
Scab	31	tr-H	34.1	12.6
Scald (common)	2	L	12.0	slight

area included in this survey is part of what is known as the Western New York apple region and the 3 counties mentioned border Lake Ontario. Apple processing is carried on more extensively in this Western area than in either the Central or Eastern area.

The data summarized in Table 9 is tabulated according to whether the storage room was cooled by overhead coils or by blowers. In the 12 rooms in which coils were utilized the average temperature was 31.8° F, and in the 4 rooms utilizing blowers the average temperature was 35° F. Humidity, however, appeared to be higher in the rooms utilizing coils as there was usually free water on the floors, walls, and ceilings, accompanied by excessive surface mold development on the fruits and on the box wood.

The following diseases were found in the survey: Alternaria rot (Alternaria sp.), black rot (Physalospora obtusa), blue mold rot (Penicillium expansum), brown rot (Monilinia fructicola), gray mold rot (Botrytis spp.), and scab (Venturia inaequalis), as well as the physiogenic diseases bitter pit and common scald, and hail damage.

The average prevalence and severity of the diseases encountered are shown in Table 10. Scab was by far the most prevalent and destructive disease present in the storages. It was present in 88.5% of the lots examined, with an average prevalence of 12.6% affected fruits for all lots. In the affected lots the average prevalence of scab was 34.1%. The only other diseases present in significant amounts were bitter pit, hail damage and blue mold. Hail damage was evident in several lots examined in Monroe County where the orchards had been in the path of a hail storm not experienced in Orleans and Niagara Counties.

It was the opinion of growers and storage operators that apples were keeping fairly well in the area, considering the rather poor condition in which they were placed in storage. This means that the apples would probably go through the storage season in no better than average condition. The weather last fall influenced apples, McIntosh especially, to ripen all at one time on the tree. This made picking difficult with a limited labor supply, and as a result the apples could not be placed into storage as soon as they should have been.

Pears

Five small lots of pears ranging from 20 to 66 bushels and one larger lot of 1,950 bushels were seen in storages in Wayne, Orleans, and Monroe Counties. The pears were examined incidental to the other surveys. The diseases found included black spot (Fabraea maculata), blue mold rot (Penicillium expansum), gray mold rot (Botrytis sp.), Rhizopus rot (Rhizopus sp.), and scab (Venturia pyrina). As noted in Table 11 blue mold rot was the most destructive disease, accounting for an average loss of approximately 40% of the pears in the 6 lots. Gray mold rot was the next most destructive, causing an average loss of about 12% of the fruits.

Notes were taken on the pears during the period from January 11 to March 4, which of course was quite late for pear storage, and larger lots had been removed before such heavy losses occurred. However, the 1,950 bushel lot of Bartletts was seen January 21, and there was light to moderate infection of blue mold on 22% of the fruits at that time.

Table 11. Some diseases of pears in New York State cold storages, 1944-1945 season

Variety[a] Disease	Cooling system	Number of lots Examined	Number of lots Affected	Number of bushels	Fruits affected[b] Severity[c]	Fruits affected[b] Average % prevalence
Bartlett[d]	Coil	2		2,000		
Black spot			1		H	1.0
Blue mold			2		L-H	31.0
Gray mold			1		H	3.0
Bosc	Coil	1		66		
Blue mold			1		H	70.0
Gray mold			1		M	8.0
Rhizopus			1		trace	trace
Bosc	Blower	1		20		
Blue mold			1		L	30.0
Gray mold			1		L	30.0
Scab			1		trace	5.0
Seckel	Coil	2		60		
Blue mold			2		L-H	30.0
Gray mold			2		L-H	7.0

[a,b,c] See Table 9

[d] A Mucor and an unidentified sclerotium-forming fungus was also found in one lot of Bartletts

EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES OF VARIOUS CROPS IN IDAHO IN 1943[1]

Earle C. Blodgett

Cereal and Forage Crops

Alfalfa. Bacterial wilt (Corynebacterium insidiosum) was observed frequently and in some cases accounted for severe reduction in stand. Generally, rotations have been changed to 3 to 4 years in alfalfa and yields are reduced materially. This is regarded as the most serious disease of alfalfa in Southern Idaho.

Leaf spot (Pseudopeziza medicaginis) was observed in practically every field examined and in some locations loss of foliage was excessive, especially on over-mature hay.

Leaf blotch (Pyrenopeziza medicaginis) was noted generally but losses were regarded as rather slight.

Downy mildew (Peronospora trifoliorum) was widely scattered but resulted in slight loss.

Alkali injury (soluble salts) was observed to be severe in one field in Bear Lake County. Plants were stunted and almost entirely yellow.

A condition was observed in many fields around Twin Falls County (near

[1] Part 7 of 1943 summary of Plant Diseases in Idaho

Kimberly), which appeared as yellowing and dwarfing, with leaves rolled upward, necrotic spotting, and reduced vigor of plants. Some of the affected plants grown in the greenhouse appeared to recover while some died, and whether this represents a specific disease or is a variation of or combination with bacterial wilt is unknown. The first mention of the condition was concerned with the location of affected plants principally near fence rows and ditches and in patches that crossed the line of surface water flow.

Boron deficiency symptoms were noted in Northern Idaho counties, where this trouble is rather common.

Mosaic and other virus symptoms were noted on alfalfa, but their identity was not determined and the injury was considered slight.

Dodder (Cuscuta spp.) was observed rather commonly in Southwestern Idaho.

Barley. One field observed in Latah County showed about 5% covered smut (Ustilago hordei), and in moist situations, stem rust (Puccinia graminis var. tritici) was prevalent and severe. Another late planted field was nearly 100% infected with powdery mildew (Erysiphe graminis). Near Paris in Bear Lake County a planting showed severe development of leaf blotch (nutritional probably), and another had a trace of smut.

Oats. A small field in Latah County showed stem rust (Puccinia graminis var. avenae) prevalent and moderately severe in the lowlands. A small area was heavily infected. In Elmore County a trace of stem rust was noted in one field.

Red Clover. A large planting in Latah County showed powdery mildew (Erysiphe polygoni) which was very prevalent and causing some damage. A similar condition was noted in Owyhee County. Dodder (Cuscuta sp.) was observed in several fields in Southwestern Idaho.

Sweet Corn. A 5-acre field of "special increase" stock was observed to be generally affected by purple sheath spot and husk discoloration caused by various organisms. It was found where anthers had molded in the moist pockets. Although little damage resulted, this is the first known report of the disease in Idaho.

Wheat. Bunt (Tilletia tritici) was noted generally but only rarely was damage severe. The dwarf bunt disease has been reported in a special article (PDR 28: 785-789. 1944).

Black stem rust (Puccinia graminis var. tritici) was prevalent and did appreciable damage in many low lying fields near Moscow, Genesee, and Potlatch (Latah County). A trace was noted in Southern and Southeastern Idaho where in some years it does extensive damage. Near Ashton (Fremont County) infection was very prevalent in one field observed.

Frost damage was noted frequently in fields in the northeastern part of the State. Some acreages were cut for hay.

Foot rot (Cercosporella [herpotrichioides]) was noted in a few fields east of Genesee (Latah County) but little loss occurred.

Powdery mildew (Erysiphe graminis) was noted frequently.

In the area near Soda Springs (Caribou County) rather large acreages on many farms had been plowed out of winter wheat and seeded to spring wheat because of severe damage, probably caused by snow scald, Typhula sp. In September large patches in winter wheat fields were visible where the stubble was very light and plants dwarfed. This disease is a serious factor also in the Teton Basin (Teton County) area on winter wheat, according to the County Extension Agent.

Miscellaneous Crops

Asparagus. One small planting in Jerome County showed severe loss of plants. Although diagnosis was not certain, the damage was considered to be due to a fungus root rot resulting in a wilt.

Chokecherry. A fungus leaf spot was very common and prevalent; it is probably caused by Coccomyces sp. Red leaf (virus) was noted almost over the entire range of the host.

Garlic. In a small planting for seed (Canyon County) the stand was poor and blasting of the seed head was common. The injury was similar to that found in onions and as with that host a root rot showing a pink discoloration was present. This is different, however, from pink root.

Hops. A 10-acre hop yard near Wilder (Canyon County) showed many yellowed plants, in small areas, on which the cones do not develop properly. The condition may be due to variations in soil.

Mustard (Wild). Both the conidial and oogonial stages of white rust (Albugo candida) were commonly present on wild mustard in Bear Lake County (September).

Sugar Beet. One 5-acre field southeast of Twin Falls showed about 20% loss from sugar beet nematode (Heterodera schachtii). The infested areas were scattered over the field and appeared to have been present in previous crops. This represents, so far as is known, the first record of this disease in Idaho west of the Burley area. Its presence is regarded as of extreme importance. In the Burley-Rupert-Paul area 2 beet fields are known to be infested and about 30 fields are considered by company field men to have shown symptoms on previous beet crops; this disease so far is rather unimportant, but it constitutes a serious threat to the beet industry. A 6-acre field in Oneida County showed general infestation. In the Upper Snake River Valley the disease is regarded as a very serious problem; it is commonly present and limits production if strict rotations are not practiced. A local vegetable grower claims to have had damage to cabbage crops on infested soil.

In a large beet dump near Weiser (Washington County) rotted, hollow roots were rather common. The cause of the condition was not determined. A company field man stated that so far as he knew no nematode was known in the area but some fields showed excessively woolly roots (not curly top).

In a 14-acre field near Declo in Cassia County, in which beets were being grown for the sixth successive year with increased yields each year according to the grower, a root rot was becoming severe. It was worse in the lower end of the field, but it was not due to flooding. Dr. W. W. Ray isolated Rhizoctonia from samples submitted. Dodder (Cuscuta spp.) was very prevalent in this field and was commonly found in Southern Idaho.

Sugar beet field men were very much interested in several fields (partilarly one northwest of Paul in Minidoka County) that showed a severe leaf scorch and seemed to be associated with a root rot in some cases. The cause was not determined.

Curly top (virus) was of minor importance in the areas visited. Resistant beets are grown on most of the acreage.

Ornamentals. Several cases of severe root and wilt (Fusarium sp.) were noted on asters. Some of the plantings reportedly were made with wilt-resistant varieties.

Dahlia mosaic (virus) and ringspot (virus) were noted in several cases.

The latter virus is of considerable importance in many plantings. An unidentified virus-like disease killed several plants in gardens at Moscow.

On gladiolus an unidentified bulb rot was noted in Bingham County, causing extensive loss of plants in a commercial planting.

A crown rot probably caused by a fungus was prevalent on pyrethrum in a garden in Madison County.

On rose, powdery mildew (Sphaerotheca pannosa) was widespread and did considerable damage especially to climbing roses.

In 2 commercial plantings of sage (about 3 acres) near Boise in Ada County, a crown rot killed 1% and 12% of the plants. In another planting of 2 acres in Canyon County about 60% of the plants had died. A 2-acre patch in Twin Falls County showed only a trace generally over the field, but in one corner about 10 to 25% of the plants had died. It is believed that this disease is a fungus rot that thrives best under alkaline soil conditions, since plantings near Moscow were not affected.

EMERGENCY PLANT DISEASE PREVENTION PROJECT